Re: Entropy question

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- *From*: "Zigoteau" <zigoteau@xxxxxxxxx>
- *Date*: 27 Aug 2005 06:21:44 −0700

Hi, Andy,

> I got some of your references (Petrov's is not currently available
> either electronically or in print here)− thanks.

I am sending you some stuff (for private study GWS) which I hope you find interesting.

> > It is strange that none of your papers references any of Blake's work,
> > or Petrov's for that matter. As I said, Blake's theory gives a
> > reasonable fit to the data I have, especially when it is complemented
> > for high meniscus velocities by the Voinov/Cox theory as Petrov has
> > done.
>
> Funnily enough, I just came across a paper
>
> Golestanian, R. and Raphael, E., Phys. Rev. E 64 (2001) 031601
>
> That compares the Blake theory with the de Gennes theory− I guess what I
> call Dussan's work, everyone else calls de Gennes theory

It is not de Gennes' theory, although you might get a different impression from his papers. De Gennes is merely a good publicist. There is another respect in which he conspires to give a misleading impression − the woman who is at his side at conferences, including in the wee small hours, is not his wife.

The theory of de Gennes' papers was first put forward by Voinov and Cox. Blake's theory is applicable at low contact−line velocities, while the Voinov−Cox theory is applicable at high contact−line velocities. Petrov has come up with a formula that is valid in both limits.

> (do you have
> his Rev. Mod. Phys. paper, BTW? It's most excellent).

I have read it. He is a good publicist.

> Apparently, they make very different predictions, but
> I don't believe any definitive experiment has been performed yet.

Yes it has. Both theories have their range of validity, and the Petrov formula covers both.

> In any case, I'm still going through the above paper, but I did look
> through the Blake papers, and I believe my point is still correct: there
> is no complete solution to the problem of contact line motion.

I beg to differ.

> Blake's theory clearly neglects dissipation,

?? Clearly ?? I do not know how you have come up with that idea. Any theory which describes constant−velocity meniscus motion must be dissipative. Blake's theory describes a dissipative process. What exactly do you mean by your statement?

Cheers,

Zigoteau.

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- ***Follow−Ups***:
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    - ◊ *From:* Andy Resnick

- ***References***:
  - ♦ ***Entropy question***
    - ◊ *From:* Craig Franck
  - ♦ ***Re: Entropy question***
    - ◊ *From:* Gregory L. Hansen
  - ♦ ***Re: Entropy question***
    - ◊ *From:* Craig Franck
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- ***Re: Entropy question***
  - *From:* Andy Resnick
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